

Case 3581***Turbo bidens* Linnaeus, 1758 (Gastropoda, CLAUSILIIDAE): request for setting aside the neotype**

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Abstract. The purpose of this application, under Articles 75.6 and 81 of the Code, is to conserve two specific gastropod names *Turbo bidens* Linnaeus, 1758 (currently *Papillifera bidens*) and *Clausilia incisa* Küster, 1876 (currently *Cochlodina incisa*), by setting aside the neotype designated by Kadolsky (2009) and by fixing the neotype of *Helix papillaris* Müller, 1774 as neotype for *Turbo bidens*. This request is in line with Opinion 2176, in which *Helix papillaris* was regarded as a junior synonym of *Turbo bidens*.

Keywords. Nomenclature; taxonomy; Gastropoda; CLAUSILIIDAE; *Cochlodina incisa*; *Papillifera bidens*; stylommatophoran pulmonate snails; Europe.

1. Linnaeus (1758, p. 767) established *Turbo bidens* with a description and a bibliographical reference to a figure of a specimen collected in Italy near Florence (Gualtieri, 1742, Tab. 4, Fig. C) that did not match the description. Linnaeus (1767, p. 1240) repeated the information in the same form and added a reference to another figure which did match the description (Bonanno, 1684, Cl. 3, Fig. 41). The contradiction was discovered a few years later by Schröter (1784) who observed that Gualtieri (1742) had indeed given a figure of the species that matched the Linnean description, but that it was not Fig. C but Fig. E of the same plate. Schröter (1784) was the first to assume that Linnaeus (1758) had made a mistake and cited the incorrect figure.

2. The described species occurs mainly in Italy, where it is one of the most common snails that can be found at almost every limestone outcrop. It is well characterised by its papillated suture and has been dispersed to other coastal regions of the western Mediterranean and the eastern coasts of the Adriatic Sea. Another clausiliid species known as *Cochlodina incisa* (Küster, 1876) occurs near Florence. This species occurs only in peninsular Italy, where it is found in leaf litter and rotting wood. The name *Turbo bidens* had never been used for this species, but it could have been the species of Fig. C figured by Gualtieri (1742, Tab. 4).

3. Müller (1774, p. 120) established the name *Helix papillaris* Müller, 1774 for the species with the papillated suture. Hanley (1855) analysed the Linnean type collection and associated only one specimen with the descriptive term 'sutura subcrenata' used in 1758 for the name *Turbo bidens*; it belonged to the species with the papillated suture, which he classified as conspecific with *Helix papillaris* Müller, 1774. After consulting the Linnean catalogue, Hanley (1855, p. 351) came to the conclusion that Linnaeus possessed this shell and that it should be regarded as 'the type'. This

specimen was later lost, and no other syntypes in the Linnean collection are known (Dance, 1967, p. 21). In the following 110 years *Turbo bidens* was commonly used for this species until Forcart (1965) proposed using *Helix papillaris* for it again. Since then both names have been used, *papillaris* more frequently until around 2002.

4. Giusti & Manganelli (2005) fixed a neotype for *Helix papillaris* (Gualtieri's possible syntypes had been lost) and asked the Commission to suppress the name *Turbo bidens* (Case 3319). The Case was discussed, and the Commission rejected this request in Opinion 2176 (September 2007) stating that *Helix papillaris* 'should not be conserved by the suppression of its senior subjective synonym *Turbo bidens*'. This decision implied that the name *Turbo bidens* should be used for *Helix papillaris*, the identity of which had nowhere been disputed.

5. As the Commission had not fixed a name-bearing type for *T. bidens*, Kadolsky (2009) designated as neotype a specimen of *Cochlodina incisa* which contradicted the implied meaning of Opinion 2176. The intention was to convert the Linnean name into a senior synonym of *Clausilia incisa* Küster, 1876, and to use the Linnean name for this species in the combination *Cochlodina bidens* (Linnaeus, 1758).

6. The selected neotype can be regarded as invalid for various reasons. Since the proposal of suppression of *Turbo bidens* was rejected and the identity of the taxon was nowhere disputed, there was no exceptional need for selecting a neotype (Article 75.3 of the Code). Taxonomic objections to Kadolsky's (2009) arguments were raised by H. Nordsieck (unpublished), who argued that the neotype did not meet the conditions of Article 75.3.5, because it was not in line with the original description ('sutura subcrenata' denoted a papillated suture and no author has ever described any species of *Cochlodina* in such terms). Those who see no reason to doubt Hanley's (1855) report of the presumed syntype of *T. bidens* can argue that the neotype was not in line with what has previously been known about the original types (Article 75.3.5). Kadolsky (2009) implied that the *Turbo bidens* shell found by Hanley (1855) in the Linnean collection might not be an original specimen. Dance (1967) reported serious mismanagement in the Linnean collection years after Hanley's first studies on the types in the 1840s. This would easily explain why the original syntype was later lost.

7. For those who accept the decision taken by the Commission in Opinion 2176 the names of the two species in question should be (a) *Papillifera bidens* (Linnaeus, 1758) and (b) *Cochlodina incisa* (Küster, 1876). For those who accept Kadolsky's (2009) neotype selection the names should be (a) *Papillifera papillaris* (Müller, 1774) and (b) *Cochlodina bidens* (Linnaeus, 1758). This confusing situation is undesirable.

8. In order to bring the 230-year old dispute to an end and to conserve the current usage of *Cochlodina incisa* the best option seems to be to set aside the controversial neotype and to fix a new neotype for *Turbo bidens*. An appropriate candidate specimen is the name-bearing type of *Helix papillaris*. Müller (1774) established *Helix papillaris* and cited, among others, two figures by Gualtieri (1742, Tab. 4, Fig. D and E) from near Firenze, Italy. These specimens are lost, so Giusti & Manganelli (2005, p. 132) designated as neotype a shell collected (13 May 2005) in Firenze by S. Cianfanelli and E. Lori (Museo di Storia Naturale dell'Università degli Studi di Firenze, Sezione Zoologica 'La Specola', MZUF 24432). As explained above, all Linnean syntypes of *Turbo bidens* are lost and it has been accepted by Schröter (1784) and numerous subsequent authors that Linnaeus (1758) erroneously cited the wrong figure of this plate and had Gualtieri's (1742) Fig. E in mind. The same figure was

cited by Müller (1774). It therefore makes sense to fix as neotype for *Turbo bidens* the neotype of *Helix papillaris*, specimen MZUF 24432. This would make both names objective synonyms.

9. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to set aside all previous type fixations for the name *bidens* Linnaeus, 1758, as published in the binomen *Turbo bidens*, and to designate as neotype specimen no. MZUF 24432 deposited in the Museo di Storia Naturale dell'Università degli Studi di Firenze, Sezione Zoologica 'La Specola' (figured by Giusti & Manganelli 2005, p. 133);
- (2) to emend the entry on the Official List of Specific Names in Zoology for the name *bidens* Linnaeus, 1758, as published in the binomen *Turbo bidens* to record that it is defined by the neotype designated in (1) above.

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